

Hardy Fern Foundation NEWSLETTER

Editor Sue Olsen ■ VOLUME 4 NUMBER 2 ■ SPRING 1994



President's Message

GUY HUNTLEY

Spring continues to hold a certain thrill for me. In the borders, and the nurseries, and even in the road ditches one finds rejuvenation and promise.

I anxiously await the first new croziers of spring, and it is in my frequent visits to the border that I find my most fulfillment, it seems, this time of year.

The down side of this addiction is evident in my procrastination of other necessary endeavors (like putting together a president's report), but spring comes just once a year, and the older I get, and the busier I get, the shorter the season seems to be. So I take pains to enjoy it - or at least get out and observe it as it rushes by so sweetly, so quickly.

"Rushing by" is also an apt description of my latest term as president of the Hardy Fern Foundation. Seems like just a few fronds ago I was agreeing to serve a second term - now the annual meeting is coming up again, and a new president will guide us in our endeavor to expose, educate, and enlighten the world about hardy ferns.

We have had an eventful year - much thanks is due for the efforts of a great many people who have worked hard to build and solidify the Foundation. Such accomplishments give us momentum and clarifies our common

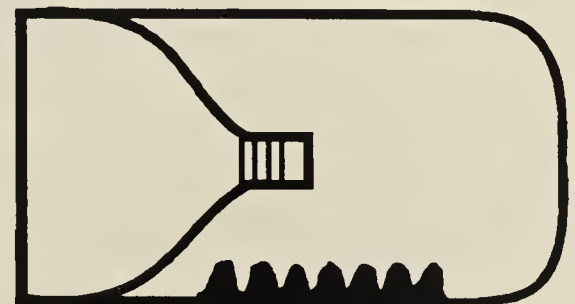
vision in such a way as to enable us to move forward with even greater success in the year to come.

It has been my pleasure to serve you as president of your organization. I will continue to be an active member, offering whatever talents I have in whatever way the HFF can use them. I encourage you to do the same. Be a participant - in whatever way you can. The Foundation is here for you - we always appreciate your input. Be a part. Be involved. Great things are happening.

Thank you for allowing me the opportunity to be your president.

Pop your Slugs!

My husband and I recently attended a local garden show where one of the demonstrations featured a simple, low cost and efficient slug trap. Start with a plastic pop bottle. Cut off about the top third (before the bottle starts to taper for the neck). Pour some slug bait in the bottom and then invert the top back into the bottle. (See Illustration.) This forms a funnel. The bottle is put on its side. The slugs crawl in and "enjoy" their feast but are unable to get back out. We have tried it with success and also found that it trapped beetles. There are several very positive advantages with this system: the bait stays relatively dry and needs less frequent replacement, the bait is kept away from pets, the slugs do not rehydrate in the rain, and while not a particularly pretty site in the border disposal is quite simple. This also works admirably well in a greenhouse where slug bait can turn moldy and unattractive in a very short time. Maybe we should call this "The Pepsi Challenge"! SSO



Slug Bait
(or Cat Food, etc)

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American Fern Society Annual Meeting - Summer 1993

Ames, Iowa - Iowa State
University
JAMES W. HORNE - HAMPTON, VA

The annual meeting of the American Fern Society was held this past year at Iowa State University in Ames, Iowa in conjunction with the American Institute of Biological Sciences Convention.

Two very exciting and interesting fern forays were planned for four days just prior to the opening plenary session, followed by several days of paper presentations, workshops and lectures. The major events of these two fern trips will be the subject of this humble report. I should mention here that the theme of the A.I.B.S. conference was "Grasslands", and many of the group had grasses and other flora as their prime interest. However, ferns and their allies did predominate!

I also feel it is necessary here to add that I am a layman in pteridological matters - a rank amateur - who has been involved with ferns for only about seven or eight years. Fortunately, Jack Schieber, another "non-professional" from Pennsylvania, and I "teamed up" rather quickly on these forays, perhaps for mutual succor and comfort, in the face of massive erudition exhibited by experts in the field! We constantly reminded each other that we really weren't quite as stupid as our many questions might indicate. I doubt seriously, however, that anyone was deceived!

As the time for the convention grew nearer, and the various streams and rivers of Iowa rose ever higher, there was general fear that the meetings, or

certainly the forays, would be canceled. However, we were most fortunate in that Ames suffered only minor damage from rising water, and our two trips, one in northeast Iowa in the Paleozoic Plateau, and the other in the central part of the state in the Woodman Hollow State Park just south of Ft. Dodge, were spared any extensive flooding. This good news was received only after we had all arrived in Ames and was greeted with cheers! The forays were "go"! We would be able to spot and identify ferns other than the rare *Aquaphilia submarinum*!!

Jean Prior and Dean Roosa, state geologist and state ecologist respectively, - both giving valuable insights into what we had seen and would be seeing.

This first foray, a three-day and two-night trip, wound circuitously through northeastern Iowa, offering us scenery that one does not usually associate with that state. Huge rock outcroppings, deep ravines and steep cliffs were the common and not the rare sight.

It is certainly not the purpose of this report to mention each genus and



Woodman Hollow. Photo by Jim Horne.

We departed at 8:00 in the morning of July 29th in two large vans, - ours driven by our host Dr. Donald Farrar of the Department of Botany at I.S.U., our destination being the town of Decorah in extreme northeastern Iowa, situated in the middle of the Paleozoic Plateau or "Driftless Area", so-called because it had not been covered by ice during either of the last two glacial advances. This afforded an excellent opportunity to observe ferns and other forms of plant life essentially unchanged for thousands of years. Joining us for part of this trip were

species of all ferns and other flora that we encountered. I shall tell of just a few in the fervent hope that some reader's favorite and most endeared plant is not left out!

At Bixby Park, we visited an algific, talus slope, where very cold air rushed out of a cave mouth, having passed through cracks in limestone, where seeping water had frozen. It was as if one had suddenly opened the door of a deep freeze! Immediately surrounding this area, and well in the flow of cold air, were found *Gymnocarpium*

robertianum (Limestone Oak Fern), *Cystopteris bulbifera* or Bulblet Bladder Fern, the lovely and delicate *Cryptogramma stelleri* (Slender Cliff Brake) and *Camptosorus rhizophyllus* (Walking Fern), slowly making its way up some stone steps. Earlier in the day we had found several patches of *Ophioglossum pusillum* or Northern Adder's Tongue. I really should add here that I am reasonably sure of the epithets that I am listing. Some of my notes were plunged into bog water, along with me, as we trudged through a peat bog!

The above-mentioned bog was at Roose Fen, a hillside (!), swampy area where there is always slowly-flowing water, which never seems to collect anywhere. It was a true bog, and the spongy surface would rise and fall as we walked - and fell! - across its surface. In, or near to, this spot were discovered a few specimens of *Dryopteris cristata*, and one or two others, which my "flawless" notes have seemed to ignore. At the end of this particular day, my feet and much of my notes, were stained a dark brown, which resisted days of scrubbing!

Our lodgings for this first foray were at the Cliff House Motel in Decorah and were reasonably nice, although the accompanying restaurant was not really prepared for such an onslaught of mad pteridophiles! We were also somewhat late arriving and as a result, their culinary offerings were skimpy, to say the least. The following day, the local fast-food establishments did a booming breakfast and dinner business. Our lunches were provided by Don Farrar and his crew and were delicious and certainly ample!

During Day Two, we visited a real variety of habitats, such as maple-basswood woodlands, where quite a number of normally eastern species

found their western-most range limits. We climbed quite a hill (at the time it seemed more like Mt. Rainier to us!) to discover huge sandstone and limestone cliffs, - resembling gigantic chimneys. On their surfaces and in their fissures abounded *Pellaea atropurpurea*, *Dryopteris carthusiana*, *D. intermedia* and the latter's hybrid *D. x triploidia*. Even some of the experts had a few moments of disagreement as to just what was this hybrid! The ever-delightful Rock Cap Fern (*Polypodium virginianum*) was also very much in evidence on these rocks and cliffs.

I feel that I should add that several stops were made to examine various examples of the "allies". The horse-tails and scouring rushes seemed plentiful, and there were quite a few experts in this area along with us as well. Among these, (the "allies", and not the "experts"!) were *Equisetum scirpoides*, *E. laevigatum*, *E. hyemale*, and the hybrid *E. x ferrissii*.

After returning to Ames on the "third day", we "arose" refreshed from

narrow sandstone gorge, - again difficult, at least for this easterner, to believe that one was indeed in Iowa! There were approximately two dozen fern species located here. A few interesting disjuncts were observed in the hollow, among which was *Dryopteris goldiana*, again, the attractive and delicate *Cryptogramma stelleri* was seen clinging to the moisture-laden rock walls of the stream at the bottom of this gorge. The large and stately Ostrich Fern (*Matteuccia struthiopteris*) provided an interesting backdrop in several places in the bottom of the canyon and along the banks of the creek or stream through which we "sloshed" and "rock-hopped" for a couple of hours. *Cystopteris bulbifera* was again spotted here, as well.

During our descent to the bottom of the gorge, as well as on the other hikes, mosquitoes and stinging nettles were our constant and not-welcome companions. This was not a junket for the short-winded, as we, of course, were faced with climbing out of this chasm

in order to return to our vans! The weather was quite warm and fortunately we had been forewarned as to certain conditions that we would encounter. The water canteens and insect repellent were much in evidence. The raingear came in

handy on at least two occasions.

As mentioned earlier, the theme for the entire conference was "Grasslands"

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The Cake! Photo by Jim Horne.

experiencing civilization once again and headed out on Sunday morning for about a sixty-five mile trip to Woodman Hollow, northwest of Ames. The "hollow" is a very deep and

The Contest and a Contest:

Ferns at The Wild Gardens of Acadia, Acadia National Park, and a Brief History of the Park and the Gardens

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It would not be difficult for me, or any other fern lover, to visit The Wild Gardens of Acadia, in Acadia National Park on the coast of Maine, and then write a short article on the fern species grown there and add a few photographs. Such an approach would be entirely appropriate for some gardens.

However, given the above subject, an article of this type would leave out many interesting avenues of inquiry: the centuries of history of Mount Desert Island, where the park and its garden are located: the 100 years or more of deep interest in the island's flora: the creation of the national park and the tragedy that struck it in 1947: its rebirth from this disaster and, finally, the development of The Wild Gardens of Acadia.

I hope, then, that the reader of this newsletter will have a few minutes of leisure for such a discussion of this now-beautiful park and the garden which is one of its highlights and which contains examples of many of the island's ferns.

The contest

During the millennia before the arrival of Europeans on our shores, the native peoples of what is now Maine, the Abnaki, did exactly what so many people do now. They went to the Maine coast and its islands for the summer. There, as shell heaps attest,

they dug for clams, fished, picked the wild berries of the area and, like their modern-day counterparts, enjoyed the summer weather. Doubtless, in the spring, as they made their way down the waterways of the state toward the sea, they sampled the fiddleheads of the Ostrich Fern, a local delicacy today. With the arrival of fall, they returned inland to spend the winter in less exposed locations.

Once the Age of Exploration began, the island, which is the third largest on the Atlantic coast, after Long Island and Martha's Vineyard, and which is distinguished by a mountain range topped by Mt. Cadillac (1,530 ft), became a prominent and welcome landmark for seamen of the north

Atlantic. According to Sargent F. Collier, Giovanni da Verrazano, navigating under a French flag, left a record of it in 1500, calling it Acadia. According to Samuel Eliot Morison, a leading historian of this period, Estevan Gomes, a Portuguese sailing in the service of Spain, sighted it in 1525.

Its first claimant, in 1604, was the Sieur de Monts, Lieutenant General of New France, who received it from King Henri IV. His pilot and mapmaker was Samuel de Champlain, Canada's founding father, who named the island "l'Isle des Monts-deserts" because the summits of its mountains are bare rock. De Monts was succeeded by a Marquise de Guercheville,



This photograph, taken in 1965, shows Dr. Edgar T. Wherry and Mrs. Harold Hubler, the wife of the Superintendent at that time of Acadia National Park. It was under Mr. Hubler's administration that the Wild Gardens of Acadia were founded. Note the beautiful view in the background, so characteristic of Mount Desert Island.

who in 1613 sent a group of Jesuits to found a settlement. They were defeated in this effort by Capt. Samuel Argall, who was connected with the Virginia Colony (he later took Pocahontas to England as a hostage) and who, to quote Morison, "had orders to mop up any French settle-

ments between the Hudson and the St. Lawrence." This, then, was one round in the Contest, the long struggle between the French and the English for possession of North America.

Argall's intervention, however, did not end French efforts. In 1688, a Gascon commoner named Antoine Laumet, who had instantly improved his social station by changing his family name to La Mothe and, for good measure, adding a title, Sieur de Cadillac, acquired a grant to the island and the surrounding area and spent some time there before founding the city of Detroit. In the eighteenth century, however, French fortunes ebbed. In 1758 the English took the fortress of Louisbourg, on Cape Breton Island, and the 1758 battle and British victory on the Plains of Abraham, at Quebec, essentially concluded The Contest as far as North America east of the Mississippi was concerned.

But the ensuing 1763 Treaty of Paris did not end French interests in Mount Desert Island. After the American Revolution, Cadillac's granddaughter, Mme de Gregoire, successfully upheld her claim to ownership of the eastern part of the island, and she and her husband are buried there.

These details explain the French background of the Maine coast and the French place names—Castine, Lemoine, Isle au Haut, Calais, even Maine—found there. The French influence now continues with the descendants of French Canadians who later came to the state to work in the shoe and textile mills. Their names—Therault, Saucier, Laverdiere, Ledoux—fill the local phone books, and their cousins from the Province of Quebec come to Old Orchard Beach for their summer holiday. Had the French retained control of their North American possessions, this article would be about "les fougères."



Map of Mount Desert Island and the surrounding area. (by Dawn Simpson).

Geology of the island

This is a good point for a word on the island's geology. The mountains of the island, its most dramatic feature, are the remains of a much higher range that was first surrounded, then covered by the glaciers of the ice age. When the ice withdrew, approximately 10,000 years ago, it left the lovely valleys and lakes—Echo Lake and Jordan Pond, for example—and one fjord, Somes Sound. The glaciers removed whatever had accreted over the eons and left the island's bedrock exposed—granites, schists and trap rock. They also deposited gravels, boulders and erratics as they withdrew. The weight of the ice caused the island's and the state's "drowned coastline," characterized by an infinite number of islands and bays.

Acadia National Park and interest in the island's flora

In the nineteenth century, the beauty of the island attracted painters, and what painters they were! Thomas Cole came there in 1844; he was followed by others, among them Frederick Church, Fitzhugh Lane and William Morris Hunt.

Next came scientists, one being the Harvard geologist Nathaniel Shaler. Then arrived, and still do, the "rusticators"—summer people. One of them, Charles W. Eliot, Jr., son of the President of Harvard University, was discussed in my article on Bartholomew's Cobble, published in the summer 1993 issue of this newsletter. In 1880, he and some friends camped near Somes Sound and, according to Collier, carried out "scientific studies." Because the younger Eliot became a landscape architect, this scientific work included some botanizing. He also persuaded his parents to establish a summer home at Asticou, one of the most beautiful areas of the island.

Beginning in 1850, steamships began regular service to the Maine coast, and, in 1887, a train synonymous with elegance, the Bar Harbor Express, entered service, bringing visitors from Washington and the other big cities of



Common polypody (*Polypodium virginianum*.) C.W. Guiles.

the east coast. At Bar Harbor, hotels went up, and the wealthy began construction of "cottages," enormous residences which, in the Gilded Age, became the backdrop for summer sports and an elaborate social life.

So, when do we get to the ferns? Patience! We first have to have the national park!

While some were enjoying themselves in the Bar Harbor whirl, Harvard's President Eliot and some other far-seeing gentlemen founded a land trust to keep land on the island, and in Hancock County, from falling victim to the transportable saw mill, which had recently been invented, and to the spreading estates of the rusticators. To lead this effort, Eliot elected a wealthy Bostonian, George Bucknam Dorr. Dorr then made his life's work the acquisition of the properties that now form the park, and it all but bank-

rupted him. When it became evident that the State of Maine might not protect in perpetuity the "Public Reservation" formed by Dorr and his colleagues, he turned to Washington, specifically to Gifford Pinchot who was chief of the Forest Service, founded in the administration of Theodore Roosevelt.

The story of how, during the last years of Woodrow Wilson's administration, Dorr's reservation became "Sieur de Monts Monument," Acadia

National Park's first name, is too complex to discuss here. Suffice it to say that, after the federal government had taken the land under its wing, Dorr was appointed its director at \$1 per month! Despite this stingy protection, the park did continue to grow thanks to the interest and benefactions of John D. Rockefeller, Jr. who summered at Seal Harbor. Rockefeller donated land and built a system of carriage roads and drives through the park. Today, the park covers almost 33,000 acres, some of which are on another island, Isle au Haut, and on Schoodic Point, a dramatic headland northeast of Mount Desert Island.

Interest in the island's plants

I have in hand a volume by Edward L. Rand and John G. Redfield, dated 1894 and entitled *Flora of Mount Desert Island, Maine: A Preliminary Catalogue of the Plants Growing on Mount*

Desert and the Adjacent Islands. In addition to the flowering plants, the book contains a section on the fern, horsetail and clubmoss classes, as well as other spore-bearing ones. The preface declares that "In 1880 the Champlain Society, an association of college students (the younger Eliot and his friends) formed for the purpose of field work and study in various branches of natural science, established its camp on the shores of Somes Sound at Wasgatt Cove, Mount Desert Island. This Catalogue of Plants represents the final results of work begun by its botanical department." The authors state that this is the first organized study of the region's flora. They note, perhaps predictably, that "specimens of every plant in this list, with very few exceptions, will be found preserved in the Mount Desert Herbarium, at present kept in Cambridge, Mass." and they thank, guess who? Harvard's President Eliot "through whose interest and kindness the publication of our work has been made possible".

In 1925, a scientist well known to fern lovers, Edgar T. Wherry, presented a talk on the Island's indigenous plants to the Garden Club of Mr. Desert Island. At that time, he was with the Bureau of Chemistry and Soils of the U. S. Department of Agriculture and was president of the Wild Flower Preservation Society of Washington. His researches on the island led, further, to two articles, "Nitrogen as a factor in plant distribution on Mt. Desert Island, Maine" (*Ecology*. 1926. 7:140-142) and "Wood-ferns on Mt. Desert Island, Maine" (*Am. Fern Jour.* 1926. 16:3-7). In 1928, the garden club underwrote the publication of his first book *Wild Flowers of Mount Desert Island, Maine*. Among the supporters of this enterprise were some names known for wealth and influence: Mrs. Max Ferrand (the landscape architect Beatrix Ferrand), Mrs.

John D. Rockefeller, Jr., Edsel B. Ford, and Mrs. Morris Loeb.

In his little book, Wherry refers to Rand and Redfield as well as a second work "*Vegetation of Mount Desert Island, Maine and its environment* by Barrington Moore and Norman Taylor (1927). When I asked a rare book dealer in Maine about obtaining a copy of Wherry's book, he said that it is exceedingly rare; it had not passed through his family's shop in 20 years!

Wherry divides the plants of the island into four groups. First are the 30 percent which were "northern"—which "survived glaciation in the immediate neighborhood of the margins of the ice-sheets, or along the higher Appalachian Mountains, where the climate during ice advances was no doubt cooler than at present." His second group, defined as "intermediate," is comprised of the twenty-five percent "which survived ice advances at considerable distances away from the ice-margins, in the lower portions of the Appalachian Mountains and adjacent foothills." The third group, also twenty-five percent, are "southern . . . those which survived glaciation in still milder regions, especially in the Coastal Plain, the lower Mississippi basin, and in the neighboring foothill or plateau regions." The remaining ten percent were "introduced." He notes that, although the island is separated from the mainland by only a narrow channel, there are many plant families that did not become established on the island. These include mallows, primroses, gentians, and poppies, among others. He attributes this phenomenon to the acidity of the Island's soil.

The disaster

In 1944, George Dorr died at 91, blind and impoverished. It is fortunate that

he did not live to endure the disaster that overcame his park three years later, the 1947 Bar Harbor Fire.

The summer of that year was the driest on record; when October came, it had not rained since May. In those days, there were often continually burning fires at dumps, and it was at just such a location, on October 23, that a fire started to burn out of control and then, fanned by gale-force winds, in the end burned 17,000 acres, including 10,000 acres of the park. Even in early November, when the worst was finally over, underground fires still burned in dry peat bogs. Among the losses were the Jackson Laboratory which was, and remains, well known for biological research and the breeding of genetically specialized mice for laboratories around the world, a little under one-sixth of the island's permanent homes, five hotels and 67 of the island's 222 summer cottages. The Depression and World War II had taken a toll on Bar Harbor's resort life, and the fire delivered the *coup de grace*. The park was greatly damaged, but nature would, after many years, heal the wound. The town, a center for tourism, has also taken on a new role. The founding, in 1969, of The College of the Atlantic, whose campus comprises some of the undamaged summer estates, has made it an academic community.

The second contest

Let us return to botanical business. In 1960, the Horticultural Chairman of the Bar Harbor Garden Club (another of the three such clubs on the island) offered a prize to the member "whose garden contained the largest number of protected wild flowers." There were six contestants, and the winner was Dorcas Crary, a scientist affiliated with the Jackson Laboratory whose garden displayed 22 such plants. The contest

was held the next year with the understanding that Crary would not enter! The club's judges then raised the question of growing a collection of native plants for public enjoyment.

It just so happened that the husband of one of these judges, Harold Hubler, was the Superintendent of Acadia National Park, and he offered a location, covered with post-fire brush, at Sieur de Monts Springs which George Dorr had many decades earlier selected as "sanctuaries for the plant and animal life—the flora and fauna—of the Acadian region." The name of the project, "The Wild Gardens of Acadia" was suggested by the park's naturalist, Paul Favour.

Commencing in 1961, to quote from the records maintained at the garden, members of the garden clubs on the island went to work to "cooperate with Acadia National Park in establishing a horticultural garden of plants native to the Island, especially those that should be protected." In determining how to present the plants, Dorcas Crary suggested that the various parts of the garden should reflect the ecological habitats of the island. Thus, in the space of about one acre, there are twelve such habitats, among them, a bog, a pond, a meadow, a coniferous woods, a mixed woods, a mountain top with Mt. Desert's characteristic creeping juniper and alpine plants, and even a seashore area, maintained by the importation of beach gravel and seaweed. In selecting the plants for the garden, the gardeners, who were and remain volunteers, used the handbooks by Rand and Redfield, and Wherry, as well as recollections of residents of the island.

In 1965, Dr. Wherry visited the garden and had a further suggestion: "using one area for a demonstration of the variety of forms within a species." He

might also have said, "within classes," because while the visitor finds ferns throughout the garden, particularly Royal ferns along the brook that flows from Sieur de Monts Spring, there is a path in the Mixed Woods area devoted solely to the ferns of the island. Most of these are common to Maine, the Common polypody, the Spinulose woodfern, the Evergreen woodfern, the Lady, Marsh and New York ferns, as well as the Cinnamon, Royal, and Interrupted ferns. In a corner of this fern walk, the gardeners have placed the rarer specimens, for example, the Fragile fern, the Rusty woodsia, the Crested woodfern and the Long Beech fern.

In checking the accompanying list, the reader will note that all but two of the plants, the Maidenhair spleenwort, and the Fragile fern, are associated with acid soil conditions. As Wherry wrote, "the surfaces of the solid rocks and the more exposed masses of glacial drift have been thoroughly leached of their lime and other bases by the rain, and have become in many cases mediacid" — that is, having a pH of 4.1-5.0. Wherry found the Maidenhair spleenwort, and he also found, in fields, where the acidity was reduced, the Meadow adder's tongue (*Ophioglossum vulgatum*) and seven species of Botrychiums: "Dwarf grape fern" (Least moonwort, *B. simplex*); "Triangle grapefern" (possibly the Narrow Lance-leaved moonwort, *B. lanceolatum* subsp. *angustisegmentum*); Daisy-leaf moonwort (*B. matricariifolium*); "Thickleaf grapefern" (*B. ternatum intermedium*), probably a form of the Lace-frond grape fern, (*B. dissectum*); "Oblique grapefern" (*B. Obliquum*, probably also *B. dissectum*); "Cutleaf grape fern" (probably also the Lace-frond grape fern, *B. dissectum*); and the Rattlesnake fern (*B. virginianum*).

Wherry also lists a number of clubmosses and "about five species" of quillworts that, also, are not in the garden.

Barbara C. Cole, the current Co-Chairman of the Wild Gardens of Acadia, wrote me: "We do not have any Ophioglossums or Botrychiums. They were tried in the past, but our soil is so acid it is difficult to maintain them. They are found (although not recently) in isolated pockets of 'limey' soil."

On the subject of woodferns, Wherry wrote: "It is to be hoped that further studies of this group of ferns will be made, with special reference to the occurrence of intermediates and hybrids between them. Their abundance in readily accessible localities on Mount Desert Island makes this an unusually favorable site for such studies. Observations as to extent of correlation between the characters of the rootstocks, stipe-scales, frond-outlines, glandularity of indusia, etc., would be of value in making decisions as to how many species really exist in the group."

The garden today

When I visited the garden in August of 1993, I was struck by the beauty of the late summer flowers—steeplesh, meadowsweet, fireweed, goldenrod, asters and, most showy of all, the cardinal flower. The visitor in May would find foamflower, mayflowers, violets, and trilliums. Those coming a few weeks later would see ladyslippers, jack-in-the-pulpit, rhodora, and bunchberries. For June into July, the showy lady's slipper, solomon's seal, the rose pogonia, pitcher plants, and beach peas would attract attention, and the tourist arriving in fall would enjoy the colorful berries of the mountain ash, bunchberry, cranberries, and the

purples and yellows of asters and goldenrod. In all, there are 400 species growing there. Needless to say, bird watchers find this an excellent spot in which to pursue their avocation.

Though nominally a project of the Bar Harbor Garden Club, the garden's corps of volunteers now extends beyond the membership of that and the other clubs on the island. Last summer, the approximately 16 volunteers who maintain the garden were assisted by one paid national-park student intern. The garden's budget comes from two yearly plant sales, and from the sale of cards and leaflets at the entrance.

This garden has received awards, at the national level, from the National Council of State Garden Clubs and the Garden Club of America, as well as from the New England Wild Flower Society. In addition, the National Park Service presented the garden's committee with a Certificate of Appreciation, and its founders, Janet R. Tenbroeck (who passed away in 1992) and Elizabeth F. Thorndike, received Silver Medals from the Massachusetts Horticultural Society "for vision and skill in preserving native plants through the creation of the Wild Gardens of Acadia."

According to a park employee, four million people visit Acadia National Park each year. Records are not kept of the number who visit the garden: however, as the park's literature states that Sieur de Monts Springs is one of the park's most interesting features, a great proportion of that four million must wander happily through the garden's paths. George Dorr, who envisioned this location as "sanctuaries for . . . the flora and fauna . . . of the Acadian region" would be very pleased.

I am most grateful to Barbara C. Cole, Co-Chairman of the Wild Gardens of Acadia; Ruth Grand, the garden's volunteer in charge of the Mixed Woods Area, in which the fern walk is found; Justin Willis, a 1993 park intern assigned to the garden; and Anne Rumsey, Reference Librarian of the New York Botanical Garden, for their kind assistance to me.

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Ferns and Fern-Allies in The Wild Gardens of Acadia

Asplenium trichomanes (Maidenhair spleenwort)

Athyrium filix-femina f. *rubellum* (Lady fern)

Athyrium filix-femina subsp. *asplenoides* (Michx.) Hulten (Southern lady fern)

Cystopteris fragilis (Fragile fern, Brittle fern)

Dennstaedtia punctilobula (Hay-scented fern)

Dryopteris carthusiana (*D. spinulosa*). (Spinulose woodfern, Toothed woodfern)

Dryopteris cristata (Crested woodfern)

Dryopteris intermedia (Evergreen woodfern)

Dryopteris marginalis (Marginal woodfern)

Dryopteris spinulosa v. *fructuosa* (Fruitful woodfern)

Dryopteris x boottii (Boott's woodfern)

Equisetum arvense (Field Horsetail)

Equisetum sylvaticum (Woodland horsetail)

Gymnocarpium dryopteris (Oak Fern)

Lycopodium lucidulum (Shining club-moss)

Lycopodium tristachyum (Ground pine)

Matteuccia struthiopteris (Ostrich fern; not native to the island)

Onoclea sensibilis (Sensitive fern)

Osmunda cinnamomea (Cinnamon fern)

Osmunda claytoniana (Interrupted fern)

Polypodium virginianum (Rock polypody)

Polystichum acrostichoides (Christmas fern)

Pteridium aquilinum (Bracken)

Thelypteris noveboracensis (New York fern)

Thelypteris palustris (Marsh fern)

Thelypteris phegopteris (Long Beech fern)

Woodsia ilvensis (Rusty woodsia)

American Fern Society Annual Meeting (Continued from page 3) and we indeed had several experts in this area along with us. Some could spot and correctly identify grasses from espying one slender blade at fifty yards, it seemed. I certainly learned that "grass" meant considerably more than what I must frequently mow here in Virginia!

It was a real delight seeing a few friends of previous forays and meetings, such as Dave Lellinger of the Smithsonian, whom I constantly pester with requests for aid in identification. I must mention here meeting Alan Smith of U.C.L.A. - Berkeley, current president of the A.F.S., (now past

president ...ed.) who also was most patient with my endless questions! I wish him well in his current project with John Mickel of the New York Botanical Garden on Mexican pteridophytes. Jim Peck of the University of Arkansas and Charlie Werth from Texas were a great help and source of information, as well.

We returned to Ames around 5:00 in the afternoon and some of us made it to the opening session at 7:00. I attended quite a few of the sessions of reports and papers during the next few days, many of which reminded me of just how much I did NOT know! But then, I was partially comforted in knowing that not too many present could have discussed intelligently with me the entire scope of German strong verbs. Thirty years of teaching German does NOT prepare one for gametophyte variations in the genus *Botrychium*!

A "must" to mention here was the delicious, but of somewhat dubious appearance, dessert on display, and later eaten at the A.F.S. luncheon. This was a huge cake, perhaps a foot and a half across, in the shape of, and decorated like a giant *prothallus*, of varying shades of green, brown and white, complete with antheridium and archeogonium! We were cautioned that all was edible, with the one exception of the sperm cells, - raising their happy plastic heads merrily out of their antheridia!

It was, all in all, a fantastic trip to Iowa, and I am truly looking forward to this year's meeting in Knoxville. I understand that some most interesting fern forays are in store for us. I strongly encourage as many of us H.F.F.'ers as possible to make the trip. It would be great to see some of you east of the Rockies!

Dryopteris uniformis

JAMES R. HORROCKS -
SALT LAKE CITY

Dryopteris: meaning "Oak fern" or "Wood fern"

uniformis: referring to its consistent form or pattern.

This is an often overlooked species from the Asian woods that does remarkably well in the shaded garden. It is sometimes listed as a "dwarf" form, but in the author's experience, it is a medium-sized fern producing two-foot fronds if nestled among large rocks. It is native to Japan, Korea, and China, frequenting wooded areas. It could certainly be confused with any number of other bipinnate species of *Dryopteris*, although its dark brown scales set it apart and give it a rather striking effect, reminiscent of the scales on *Dryopteris atrata*. The combination of dark scales and the fresh medium green pinnae are very ornamental. It has hybridized with at least seven other Japanese *Dryopteris* species.

Description: The rhizome is stout, short, and erect. The fronds are fully evergreen with stipes 4-12 inches long and densely scaly; the scales being black-brown in color and linear to lanceolate in outline. The blade itself is herbaceous, broadly lanceolate to oblong-ovate, and from one to two feet in length and 4 to 6 inches wide. The frond outline is acuminate, the lanceolate pinnae are bipinnatifid to somewhat bipinnate, rather numerous and spreading. The sterile pinnae are often twice to even three times as broad as the fertile ones. The pinnules are oblong to broadly oblong-lanceolate and rounded to obtuse. The sori are usually borne on the upper 1/4 to 3/4 of the frond. The indusia are



Dryopteris uniformis. Photo by Kim N. Durrant, SLC, Utah.

orbicular-reniform and entire. The spores are dark brown and produced rather abundantly.

Culture: This delightful species has proven quite hardy and rather adaptable, not seeming to be very particular about soil pH. It is at its best among large rocks or boulders and is quite attractive planted in colonies. The croziers are particularly enchanting in spring with their dark brown scales. In less humid conditions, it is by far a much sturdier plant than *D. erythrosora*, which is more often available but not a particularly good choice in dryer climates. The soil should be rich in leaf-mold and kept moist. In the author's garden, (pictured) *Dryopteris uniformis* is attractive in a sizeable group among rocks and also grows elsewhere amid *Adiantum venustum* and in proximity to *Dryopteris atrata* and *Polystichum tsus-simense*, presenting all together a very pleasant study in contrasting patterns. It is a very worthy garden subject and rather easy from spores, growing comparatively quickly into sizeable plants.

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Neibonsha Ltd., Publishers, Tokyo



Spore Exchange to Change Hands

After six years of dedication and hard work Jocelyn Horder is retiring as Curator of the American Fern Society and Hardy Fern Foundation Spore Exchanges. Jocey has done a wonderful job and we will miss her good cheer, patience and encouraging manner, and only reluctantly concede that she does indeed deserve some time for her many other pursuits.

Wayne Baxter of 307 Riverdale Cir., Stephenson, VA 22656 is taking over the exchange this spring and all 1994 spore collections should be sent to him at the above address. Wayne is an amateur fern collector in Northern Virginia and has been growing ferns for about 5 years. Wayne has been hard at work at his database and wants very much to expand the information that is sent out in the spore list. It would be a tremendous help to him if you could include as much information as possible about the fern when the spore is contributed. This would include hardiness zone, soil preference, country of origin, evergreen/deciduous and any other pertinent information that would be of interest to growers. He is particularly anxious to include the hardiness zone, but it is by no means a requirement of donations and it is understood that many donors will be unable to accommodate this request. While compiling this data will be an immense task, in time we should have a very comprehensive list. It is also hoped that green spored ferns can be added to the list. The way this will be accomplished is: If you have the fern available, let Wayne know when you send in your regular donations. When another member requests that fern, Wayne will give them the address of the person who has the fern. The member who needs the spores will then

contact the person who has the fern directly to obtain the spores while still fresh. Please help Wayne with spore contributions, preferably cleaned, and do take a few minutes to add the suggested information. Our best wishes to Wayne for success in his new undertaking. If you have any comments or suggestions regarding the exchange please let him know and if you live in the vicinity of Winchester, VA and would be willing to help DO get in touch.



Thank You

The Officers and Board Members of the Hardy Fern Foundation would like to thank those members who gave above and beyond the standard membership categories:

Contributors:

Mrs. Thomas Anderson
Mrs. Hugh Baird
Mr. Naud Burnett
Mrs. Phil Duryee
Mrs. Garrett Horder
Mr. Charles Lamade
Mr. Marshall Majors
Chris Spindel
Robert & Mary Ellen Tonsing
The late Mrs. Pendleton Miller
The late Mr. Thomas Gillies

Supporting:

Mrs. Charles Hyde

Active & Endowment:

Elizabeth Boyd
Michael Concannon
Catharine Guiles
William Plummer

Family & Endowment:

Guy Huntley
Harry & Sue Olsen
Martha Robbins

A Brief Book Review

Crazy About Gardening Des Kennedy, Alaska Northwest Books, Seattle, WA 1994.

I recently received a review copy of the above book. It arrived at an ideal time....just prior to a vacation... so I had the leisure to enjoy it and enjoy it I did. This is not a fern book. In fact there is but an occasional reference to our friend the Bracken. Neither is it a "how to" book but rather a collection of observations on the joys and foibles of gardening AND gardeners. The author, a gardener to the core, and his wife Sandy have carved out, quite literally, a place of their own on Denman Island in British Columbia's Georgia Strait. Many of his observations will hit home, often in the funny bone. This is a book to be read with a friend, preferably a gardener so that when the reader erupts in laughter, the nugget can be shared. His chapters range from gardeners, to the garden's components i.e. soil, water, trees, lawns and money. Let me quote from the chapter on trees, "One of the most magnificent components of gardening, trees also offer the amateur grower the grandest opportunities for blundering on a colossal scale. Choosing the wrong species, locating it improperly, planting it incorrectly, pruning it inappropriately - a good -sized tree can easily become a monument to incompetence visible for blocks." Enjoy! SSO

1993 International Botanical Congress Excursion to Yaku Island

'YAKUSHIMA TREASURY OF FERNS'
DR. W. CARL TAYLOR, MILWAUKEE, WI



Twenty-seven members of the "Yakushima Treasury of Ferns" field trip gathered at the Kagoshima Kuko Hotel on the evening of 22 August. Field trip organizers welcomed us with commemorative tee shirts, an excellent dinner of numerous Japanese delicacies, and a slide show about Yakushima (Yaku Island) and its pteridophytes.

The next morning, we flew about 65 miles south of Kagoshima to Yakushima. Although Yakushima is less than 20 miles in diameter, it contains nearly 400 kinds of ferns and fern allies. Pteridophyte diversity on this small island has been related to isolation, topography, and climate. First, Yakushima is a somewhat isolated island and endemic pteridophytes have evolved here. Second, Yakushima has a mountainous topography ranging in elevation from sea level to over 6,200 feet with

habitats varying from subtropical to subalpine. Furthermore, Yakushima has a climate of tropical warmth and humidity at low and mid elevations in summer, whereas deep, persistent snow covers its mountains in winter. Therefore, isolation, topography, and climate may well have created the right conditions for many kinds of ferns and fern allies found on Yakushima.

During our first afternoon on Yakushima we visited Shiratani-unsui-kyo, a mid-elevation temperate cloud forest about 600 feet high on the northeastern side of the island. Shrouded in clouds and mist almost everyday, this forest contains some of the most valuable trees and some of the most beautiful scenery on Yakushima. Here, among the fir (*Abies firma*) and fern-frond cypress (*Chamaecyparis obtusa*) trees we encountered the *yaku-sugi*, huge gnarled trees of the Japanese Cedar (*Cryptomeria japonica*). These centuries-old giant cedars looming in the clouds and mist are an awesome site indeed.

The high humidity of this temperate cloud forest provides conditions favorable to many pteridophytes. Here we saw *Histiopteris incisa* with its large, glabrous, bipinnate fronds which are glaucous beneath and have marginal sori covered by a reflexed marginal false indusium. Along the trail we examined several species of *Dryopteris* including *D. formosana* with an abruptly long acuminate, ovate blade, abundant subulate-linear, dark colored, saccate scales on its rachis, nearly sessile basal pinnae, and pinnules with awn-tipped teeth, *D. hendersonii* with multicellular spine-like hairs on the upper side of its pinnules, and *D. sabaiei* with the lower half of its stipe densely scaly, no scales on its blade, and the upper portion of the pinnae axes winged. We saw many tree branches bearing the simple,

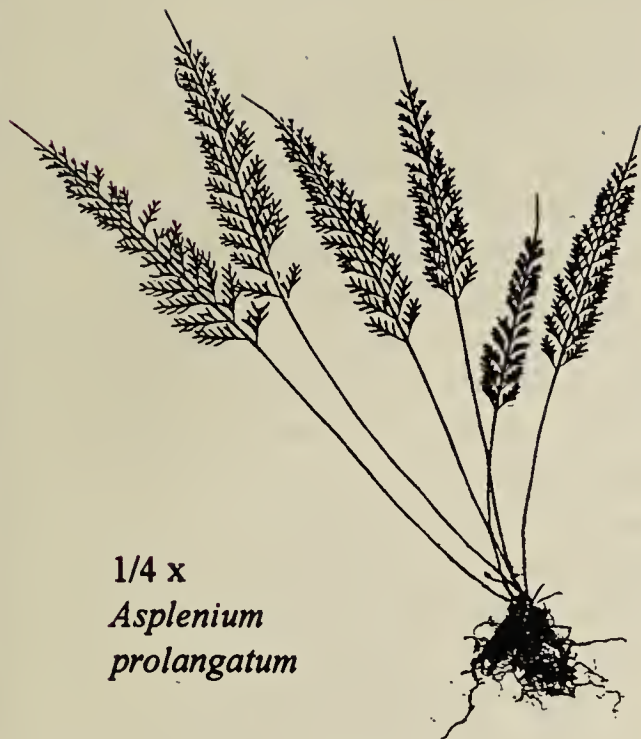
tongue-shaped fronds of *Pyrrosia lingua*. We also observed several fine plants of *Plagiogyria euphlebia* with its pinnate, dimorphic fronds. On tree trunks and branches we often saw strings of *Lemmaphyllum microphyllum* with orbicular, succulent, sterile fronds about 2 cm in diameter and elongate fertile fronds about 3 cm high. There were also plants of *Stegnogramma griffithi* with fertile fronds bearing a beautiful network of linear, sori along its veins. There are many species of *Athyrium* in Japan and here we found *A. nakanoi*, *A. subrigescens*, and *A. tozanense*. Another large genus in Japan is *Diplazium* and along the trail we saw *Diplazium kawakamii*, *D. mettenianum*, and *D. subsinuatum*.

In the evening we checked into the fine accommodations provided for our stay by Hotel Tashiro Honkan. Here we removed our shoes before entering rooms which had mats called *tatami* covering the floors. We wore robes called *yukatas*, slept on mattresses called *futons* and ate Japanese food with chopsticks while seated on the floor. Generally, dinners consisted of several different kinds of seafoods and vegetables each attractively served in separate bowls and plates.

The next day we explored Arkawa Dam and Yaku-sugi Land on the



1/2 x
Xiphopteris okuboi



1/4 x
*Asplenium
prolangatum*

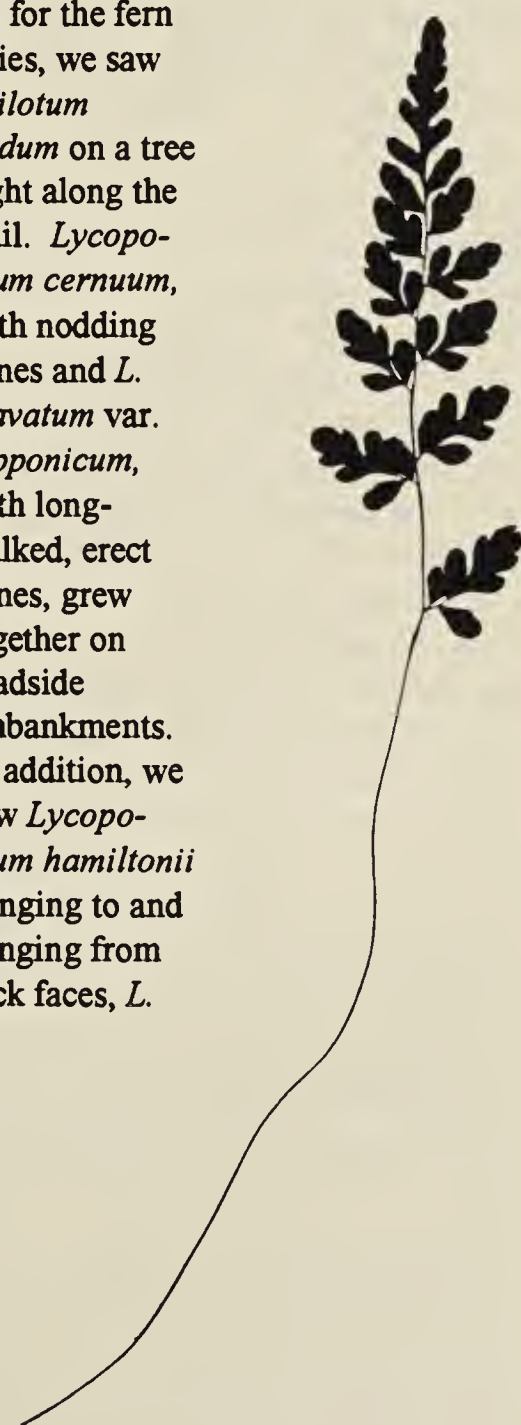
southeastern side of Yakushima. Around the parking area near the dam were plants of *Osmunda japonica* which look much like our *O. regalis*. *Woodwardia japonica* with large, leathery, but graceful fronds bearing proliferous plantlets also was there. After carefully crossing an open trestle railroad bridge below the dam, we hiked along railroad tracks where a great number of pteridophytes were found. *Dicranopteris linearis* and *Gleichenia japonica* with their characteristic falsely forking fronds were abundant. In a shaded spot we found *Plagiogyria adnata*, *P. japonica*, and *P. euphlebia* growing together. Here it was easy to compare the sterile fronds of *P. adnata* with decurrent pinnae along side those of *P. japonica* which have sessile pinnae and *P. euphlebia* which have slightly stalked pinnae. We saw several species of *Dryopteris* including *D. sparsa* characterized by sparsely scaly leaf blades and sori with incurved indusia, *D. indusiata* with scaly blades and sori covered by orbicular indusia, and *D. gymnosora* with scaly blades and sori without indusia. We also saw several species of *Thelypteris* including *T. acuminata*, *T. decursive-pinnata*, *T.*

esquirolii, and the fragile, little *T. cystopteroides*. On a low embankment we spotted *Lindsaea odorata* bearing characteristic elongate sori with indusia opening along the upper edge of the pinnae. As you might expect, the familiar bracken fern *Pteridium aquilinum* var. *latiusculum* grew along the railroad tracks. Linear, strap-like fronds of *Vittaria flexuosa* were observed growing on a tree trunk and broad bipinnate fronds of *Microlepia strigosa* were seen growing in rocky soil. *Asplenium cheilosorum*, with one-sided pinnae and sori on the teeth grew on a nearby rock exposure. We also saw *Stegnogramma gymnocarpa* with reticulate sori, *Blechnum amabile*, with leathery, dimorphic fronds, *Athyrium reflexipinnum* with deflexed pinnae, and *Cyrpsinus engleri* with round, naked sori in two series in the upper part of the each simple, linear-lanceolate front. One of the strangest ferns we saw was *Cheiropleura bicuspis* with leathery, ovate-lanceolate fronds. The fronds of this species are so firm that they rattle when they strike against each other. The specific epithet *bicuspis* refers to a bicuspid toothed apex of the frond apex, but most of the fronds we saw had acute, untoothed apices.

Driving to Yaku-sugi Land in the afternoon, we spied plants of *Lycopodium casuarinoides* several meters long climbing up steep embankments along the roadside. Not far from the highway, we saw fine examples of the tree fern *Cyathea spinulosa*. Japanese Macaque or Snow Monkeys were seen patrolling the roads. They stared at us intently from glassy, grey eyes in bright red faces, but they seemed to lack an interest in the pteridophytes we were seeking. In the Yakusugi forest we searched for and found *Xiphopteris okuboi*, a tiny grammitid with pinnatifid, comb-like fronds only a few centimeters long growing on the tree

trunks. Also on tree trunks were the filmy ferns *Hymenophyllum oligosorum*, *H. polyanthos*, and *H. Wrightii* as well as *Lepisorus onoes* with simple, spatulate fronds only about 5 centimeters long and *L. thunbergianus* with linear fronds up to 20 centimeters or more long.

The next day we traveled to the Suzunokoh River and Mount Mochoma area on the south side of Yakushima. The moist, subtropical forests in this area are home to a great number of fern allies and ferns. As for the fern allies, we saw *Psilotum nudum* on a tree right along the trail. *Lycopodium cernuum*, with nodding cones and *L. clavatum* var. *nipponicum*, with long-stalked, erect cones, grew together on roadside embankments. In addition, we saw *Lycopodium hamiltonii* clinging to and hanging from rock faces, *L.*



1 x
Thelypteris cystopteroides



1/2 x *Lemmaphyllum microphyllum*

phlegmaria, with its pendulous cones, perched high in a tree, and several forms of *L. serratum*, with sporiferous zones along its stems, in moist soil along the trail. *Selaginella* was represented also by trail side plants of *S. doederlienii*, *S. involvens*, and *S. remotifolia*.

In addition to a great number of the ferns we had seen the two previous days, many more species were found. The large, leathery fronds of *Angiopteris lygodiifolia* were frequently encountered during our hike. *Lygodium japonicum* scrambled over shrubs at several places along the trail. Additional filmy ferns included *Cephalomanes obscurum*, *Crepidomanes auriculatum*, *C. birmanicum*, *Hymenophyllum badium*, *H. riukiense*, and showy plants of *Vandenboschia radicans* were observed spiraling up tree trunks. We also saw *Microlepia marginata* with pinnate, pubescent fronds, *Lindsaea chienii* with bipinnate fronds and wedge-shape pinnules, and *Nephrolepis cordifolia* running along the ground in dappled sunlight where the overstory was thin. Several species of *Pteris* were examined including *P. kiuschiuensis*, *P. tokioi* var. *yakushimensis*, and *P. semipinnata* the last with odd one-sided pinnae that looked like they had been cut in half with scissors. *Arachniodes amabilis* with curving leathery pinnules bearing sori near their margins was found too. Our list of *Dryopteris* grew with the

addition of *D. bissetiana*, *D. pacifica* and *D. hayatae*, the latter with sparsely scaled stipes and an indusium strongly incurved along the margin. The strongly dimorphic fronds of *Bolbitis subcordata* were spotted on shaded slopes just off the trail. Its spreading sterile fronds were occasionally proliferous at their tips and erect fertile fronds had sori covering the entire lower surface of the slender pinnae. *Thelypteris* was well represented here with the presence of *T. angustifrons*, *T. glanduligera*, *T. gracilescens*, *T. parasitica*, and *T. triphylla*. *Diplazium* also made a good showing with *D. dilatatum*, *D. donianum*, and *D. tomitaroanum*. In addition we saw *Cyrpsinus hastatus* with long stipes and hastate, ternately parted blades. *Microsorium buergerianum* with long-creeping rhizomes and round sori over 2 millimeters in diameter was there and, for comparison, so was *M. dilatatum* with short creeping rhizomes and oblong sori under 2 millimeters across. *Polypodium formosanum* with thinly pubescent pinnatifid blades and veins forming areolae along the midrib was observed. We were fortunate to see the hybrid *Colysis X kiusiana* growing with its parents *C. elliptica* and *C. pothifolia*. *Colysis elliptica* has broadly ovate blades 10-25 centimeters long with 2-6 pinna pairs and obscure veins. *Colysis pothifolia* has narrowly ovate blades 40-60 centimeters long with 7-11 pinna pairs and raised veins. *Colysis X kiusiana* has irregularly shaped fronds, but it has features

which are intermediate between its parents.

On the morning of the last day of the field trip we visited a mixed forest on a steep slope above the Hanage River at an elevation of about 250 m. Here we saw many of the species we had seen previously, but also some fine ferns we had not yet seen. Along the trail there were *Lindsaea cambogensis*, *Woodwardia kempii* with deltoid fertile fronds, and *Colysis hemionitidea* with round sori. Near the end of the trail, we saw *Cyrpsinus yakushimensis* with simple blades and depressed sori growing in abundance on rocks in a dry stream bed and *Elaphoglossum yaoshinsgae* growing on a tree trunk overhanging the stream bed.

In the afternoon we visited Senpiro-notaki Falls where we had a picturesque view of Yakushima's coastline and interior mountains. Our last stop was at a sea turtle nesting beach along the west coast of the island. On a rock outcrop across the highway from the nesting beach we found *Sphenomeris*



1/4 x
Histiopteris incisa

biflora with blades that are more leathery than the fronds of *Sphenomeris chiensis*, a fern we often saw on rock exposures around Yakushima.

This is only a sample of the pteridophytes we saw on Yakushima. Professor Keisuke Yasuda compiled a list of 160 pteridophytes we observed during the field trip.



1/4 x
Woodwardia kempii

The last evening on Yakushima our Japanese hosts treated us to an excellent dinner cruise on the Miyaouragawa River. In two open power boats lashed together, we ate, drank, talked, laughed, and even shot fireworks. A wonderful evening with good friends to end a wonderful field trip.

I have participated in numerous field trips over the years, but the "Yakushima Treasury of Ferns" was one of the very best I have ever taken. Our field trip leaders, Dr. Norio Sahashi, Dr. Mitsuyasu Hasebe, Mrs. Yuki Hasebe, Dr. Keisuke Yasuda, Dr. Noriaki Murakami, Prof. Shigeo Masuyama, Prof. Reiko Yoro, Dr. Ryoko Imaichi, Mr. Yutaka

Wakabayashi, Mr. Mikio Watanabe, and Mr. Jun Yokoyama, all did a terrific job of attending to everyone's needs, answering our questions, and keeping us "on time and in line" to see the pteridophytes and the sites of Yakushima. Many thanks to our hosts for this wonderful trip. I hope to have an opportunity to return their kindness someday.

Ed. note: Dr. Taylor will be speaking on "Ferning in Japan (with some Quillworts on the Side)" at the Northwest Horticultural Society's annual Fern Festival immediately following the Hardy Fern Foundation's annual meeting on Thursday evening June 2 at the Center for Urban Horticulture in Seattle. (See box on back cover).



Pteris semipinnata



1/2 x
Lycopodium casuarinoides

The
Hardy Fern Foundation's
1994 Plant Distribution
will take place in the fall.

Watch for your
summer newsletter for
an announcement!



Northwest Horticultural Society Fern Festival 1994

Thursday, June 2, Lecture "Ferning in Japan (with some Quillworts on the Side)" by Dr. W. Carl Taylor 7:30 P.M.
Center for Urban Horticulture, 3501 NE 41st St., Seattle, WA.

Friday June 3, Garden tour at the home of Marshall Majors, 13175 Manzanita Rd. N.E., Bainbridge Island, WA
10:00 - Noon.

Friday June 3, 1:00 - 5:00 and Saturday June 4, 10:00 - 2:00 Plant sale with a huge selection of ferns and companions at the Center for Urban Horticulture.

Dr. Taylor is the Associate Curator of Botany at the Milwaukee Public Museum, a position he has held for 17 years. In addition he is an adjunct professor in the Botany Department at the University of Wisconsin. Dr. Taylor has travelled extensively and will share with us "The Yakushima Treasury of Ferns" the field trip associated with the 1993 XV International Botanical Congress (See article). Many of our best ornamentals originate in Japan and here is a wonderful opportunity to hear about them.

Our garden tour features the beautiful garden that was created by Marshall Majors and his late wife Edna to surround their waterfront home. In addition to ferns, there is an extensive collection of mature rhododendrons in woodland settings and a delightful rock garden with special little treasures. To reach the garden from the Winslow ferry dock take highway 305 to just past the four-mile marker and turn left onto Day Rd. Go straight on Day Rd. about one mile and then turn right onto Manzanita Rd. The address is at the third set of mailboxes.

To announce your special event, please send particulars to Sue Olsen, 2003 128th Ave. S.E., Bellevue, WA 98005. Deadlines are April 1, July 1, and October 1. Please feel free to submit manuscripts as well. We look forward to hearing from all of you!!!

Hardy Fern Foundation

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